TELLS THE FACTS AND NAMES THE NAMES

CounterPunch

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"Making a Billion Hindus Glow in the Dark"; Revisiting the CIA's Dangerous Play in the Himalayas

Did a Plutonium Generator End up in the Ganges?

By Peter Lee

For the U.S. intelligence establishment, the Cold War was a time of certainties: Communism had to be stopped; no cost was too great, no technological obstacle was insurmountable. And, in the case of gaining information on China's missile program, no mountain was too high.

A legendary CIA mission – employing some of the world's greatest mountaineers – sought to place a nuclear powered listening post on Nanda Devi and Nanda Kot, two of the highest peaks in the Himalayas, to eavesdrop on Chinese missile tests at Lop Nor. But in planning its Himalayan adventure, the CIA apparently disregarded the dangers and unpredictability of the element at the heart of its certainties – plutonium – and the consequences haunt the mission and its survivors to this day.

In 1966, four pounds of plutonium were lost on Nanda Devi, a sacred Himalayan peak at the headwaters of the Ganges, and to this day nobody knows where the plutonium is, what it did to the mountaineers and Sherpas on the expedition, or what it might do to the hundreds of millions of people who live and

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Bankrolling a Presidential Brand; Why Wall Street Needs Obama

The Obama Bubble Agenda

By Pam Martens

The Obama phenomenon has been likened to that of cults, celebrity groupies and Messiah worshipers. But what we're actually witnessing is Obama mania (as in tulip mania), the third and final bubble orchestrated and financed by the wonderful Wall Street folks who brought us the first two: the Nasdaq/tech bubble and a subprime-mortgage-in-every-pot bubble.

To understand why Wall Street desperately needs this final bubble, we need to first review how the first two bubbles were orchestrated and why.

In March of 2000, the Nasdaq stock market, hyped with spurious claims for startup tech and dot.com companies, reached a peak of over 5,000. Eight years later, it's trading in the 2,300 range and most of those companies no longer exist. From peak to trough, Nasdaq transferred over $4 trillion from the pockets of small mania-gripped investors to the wealthy and elite market manipulators.

The highest monetary authority during those bubble days, Alan Greenspan, chairman of the Federal Reserve, consistently told us that the market was efficient and stock prices were being set by the judgment of millions of "highly knowledgeable" investors.

Mr. Greenspan was the wind beneath the wings of a carefully orchestrated wealth transfer system known as "pump and dump" on Wall Street. As hundreds of court cases, internal emails, and insider testimony now confirm, this bubble was no naturally occurring phenomenon any more than the Obama bubble is.

First, Wall Street firms issued knowingly false research reports to trumpet the growth prospects for the company and stock price; second, they lined up big institutional clients who were instructed how and when to buy at escalating prices to make the stock price skyrocket (laddering); third, the firms instructed the hundreds of thousands of stockbrokers serving the mom-and-pop market to advise their clients to sit still as the stock price flew to the moon or else the broker would have his commissions taken away (penalty bid). While the little folks' money served as a prop under prices, the wealthy elite on Wall Street and corporate insiders were allowed to sell at the top of the market (pump-and-dump wealth transfer).

Why did people buy into this mania for brand new, untested companies when there is a basic caveat that most people in this country know, i.e., the majority of all new businesses fail? Common sense failed and mania prevailed because of massive hype pumped by big media, big public relations, and shielded from regulation by big law firms, all eager to collect their share of Wall Street's rigged cash cow.

The current housing bubble bust is just a freshly minted version of Wall Street's real estate limited partnership frauds of the '80s, but on a grander scale. In the 1980s version, the firms packaged real estate into limited partnerships and peddled it as secure investments to moms and pops. The major underpinning of this wealth transfer mechanism was that regulators turned a blind eye to the fact that the investments were listed at the original face amount on the clients' brokerage statements long after they had lost

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most of their value.

Today's real estate related securities (CDOs and SIVs) that are blowing up around the globe are simply the above scheme with more billable hours for corporate law firms.

Wall Street created an artificial demand for housing (a bubble) by soliciting high interest rate mortgages (subprime) because they could be bundled and quickly resold for big fees to yield-hungry hedge funds and institutions. A major underpinning of this scheme was that Wall Street secured an artificial rating of AAA from rating agencies that were paid by Wall Street to provide the rating. When demand from institutions was saturated, Wall Street kept the scheme going by hiding the debt off its balance sheets and stuffed this long-term product into mom-and-pop money markets, notwithstanding that money markets are required by law to hold only short-term investments. To further perpetuate the bubble as long as possible, Wall Street prevented pricing transparency by keeping the trading off regulated exchanges and used unregulated over-the-counter contracts instead. (All of this required lots of lobbyist hours in Washington.)

But how could there be a genuine national housing price boom propelled by massive consumer demand at the same time there was the largest income and wealth disparity in the nation's history? Rational thought is no match for manias.

That brings us to today's bubble. We are being asked to accept at face value the notion that after more than two centuries of entrenched racism in this country, which saw only five black members of the U.S. Senate, it's all being eradicated with some rousing stump speeches.

We are asked to believe that those white executives at all the biggest Wall Street firms now want a black populist president because they crave a level playing field for the American people.

We are asked to believe that those white executives at all the biggest Wall Street firms, which rank in the top 20 donors to the Obama presidential campaign, after failing to achieve more than 3.5 per cent black stockbrokers over 30 years, now want a black populist president because they crave a level playing field for the American people.

The number one industry supporting the Obama presidential bid, according to the widely respected, nonpartisan Center for Responsive Politics, is "lawyers/law firms" (most on Wall Street's payroll), giving a total of $11,246,596.

This presents three unique credibility problems for the yes-we-can, little-choo-choo-that-could campaign: (1) these are not just "lawyers/law firms"; the vast majority of these firms are also registered lobbyists at the Federal level; (2) Senator Obama has made it a core tenet of his campaign platform that the way he is gong to bring the country hope and change is *not* taking money from federal lobbyists; and (3) with the past seven ignoble years of lies and distortions fresh in the minds of voters, building a candidacy based on half-truths is not a sustainable strategy to secure the west wing from the right wing.

Yes, the other leading presidential candidates are taking money from lawyers/law firms/lobbyists, but Senator Obama is the only one rallying with the populist cry that he isn't. That makes it not only a legitimate but a necessary line of inquiry.

The Obama campaign's populist bubble is underpinned by what, on the surface, seems to be a real snoozer of a story. It all centers around business classification codes developed by the U.S. government and used by the Center for Responsive Politics to classify contributions. Here's how the Center explained its classifications in 2003:

"The codes used for business groups follow the general guidelines of the Standard Industrial Classification (SIC) codes initially designed by the Office of Management and Budget and later replaced by the North American Industry Classification System (NAICS)..."

The Akin Gump law firm is a prime example of how something as mundane as a business classification code can be gamed for political advantage. According to the Center for Responsive Politics, Akin Gump ranks third among all Federal lobbyists, raking in $205,225,000 to lobby our elected officials in Washington from 1998 through 2007. The firm is listed as a registered federal lobbyist with the House of Representatives and the Senate; the firm held lobbying retainer contracts for more than 100 corporate clients in 2007. But when its non-registered law partners, the people who own this business and profit from its lobbying operations, give to the Obama campaign, the contribution is classified as coming from a law firm, not a lobbyist.

The same holds true for Greenberg Traurig, the law firm that employed the criminally inclined lobbyist, Jack Abramoff. Greenberg Traurig ranks ninth among all lobbyists for the same period, with lobbying revenues of $96,708,249. Its partners and employee donations to the Obama campaign of $70,650 appear not under lobbyist but the classification lawyers/law firms, as do 30 other corporate law firm/lobbyists.

Additionally, looking at Public Citizen's list of bundlers for the Obama campaign (people soliciting donations from others), 27 are employed by law firms registered as federal lobbyists. The total sum raised

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by bundlers for Obama from these 27 firms: $2,650,000. (There are also dozens of high powered bundlers from Wall Street working the Armani-suit and red-suspenders cocktail circuits, like Bruce Heyman, managing director at Goldman Sachs; J. Michael Schell, vice chairman of Global Banking at Citigroup; Louis Susman, managing director, Citigroup; Robert Wolf, CEO, UBS Americas. Each raised over $200,000 for the Obama campaign.)

Senator Obama's premise and credibility of not taking money from federal lobbyists hangs on a carefully crafted distinction: he is taking money, lots of it, from owners and employees of firms registered as federal lobbyists but not the actual *individual* lobbyists.

But is that dealing honestly with the American people? According to the website of Akin Gump, it takes a village to deliver a capital to the corporations:

"The public law and policy practice [lobbying] at Akin Gump is integrated throughout the firm's offices in the United States and abroad. As part of a full-service law firm, the group is able to draw upon the experience of members of other Akin Gump practices – including bankruptcy, communications, corporate, energy, environmental, labor and employment, health care, intellectual property, international, real estate, tax and trade regulation – that may have substantive, day-to-day experience with the issues that lie at the heart of a client's situation. This is the internal component of Akin Gump's team-based approach: matching the needs of clients with the appropriate area of experience in the firm ... Akin Gump has a broad range of active representations before every major committee of Congress and executive branch department and agency."

When queried about this, Massie Ritsch, communications director at the Center for Responsive Politics, says: "The wall between a firm's legal practice and its lobbying shop can be low – the work of an attorney and a lobbyist trying to influence regulations and laws can be so intertwined. So, if anything, the influence of the lobbying industry in presidential campaigns is undercounted."

Those critical thinkers over at the Black Agenda Report have zeroed in on the making of the Obama bubble:

"The 2008 Obama presidential run may be the most slickly orchestrated marketing machine in memory. That's not a good thing. Marketing is not even distantly related to democracy or civic empowerment. Marketing is about creating emotional, even irrational bonds between your product and your target audience."

And slick it is. According to the Obama campaign's financial filings with the Federal Election Commission (FEC) and aggregated at the Center for Responsive Politics, the Obama campaign has spent over $52 million on media, strategy consultants, image building, marketing research and telemarketing.

The money has gone to firms like

"The 2008 Obama presidential run may be the most slickly orchestrated marketing machine in memory. That's not a good thing. Marketing is about creating emotional, even irrational bonds between your product and your target audience."

GMMB, whose website says its "goal is to change minds and change hearts, win in the court of public opinion and win votes" using "the power of branding – with principles rooted in commercial marketing", and Elevation Ltd., which targets the Hispanic population and has "a combined experience well over 50 years in developing and implementing advertising and marketing solutions for Fortune 500 companies, political candidates, government agencies". Their client list includes the Department of Homeland Security. There's also the Birmingham, Alabama-based Parker Group which promises: "Valid research results are assured given our extensive experience with testing, scripting, skip logic, question rotation and quota control ... In-house list management and maintenance services encompass sophisticated geo-coding, mapping and scrubbing applications." Is it any wonder America's brains are scrambled?

The Wall Street plan for the Obama-bubble presidency is that of the cleanup crew for the housing bubble: sweep all the corruption and losses, would-be indictments, perp walks and prosecutions under the rug and get on with an unprecedented taxpayer bailout of Wall Street. (The corporate law firms have piled on to funding the plan because most were up to their eyeballs in writing prospectuses or providing legal opinions for what has turned out to be bogus AAA securities. Lawsuits naming the Wall Street firms will, no doubt, shortly begin adding the law firms that rendered the legal guidance to issue the securities.) Who better to sell this agenda to the millions of duped mortgage holders and foreclosed homeowners in minority communities across America than our first, beloved, black president of hope and change?

Why do Wall Street and the corporate law firms think they will find a President Obama to be accommodating? As the Black Agenda Report notes, "Evidently, the giant insurance companies, the airlines, oil companies, Wall Street, military contractors and others had closely examined and vetted Barack Obama and found him pleasing."

That vetting included his remarkable "yes" vote on the Class Action Fairness Act of 2005, a five-year effort by 475 lobbyists, despite appeals from the NAACP and every other major civil rights group. Thanks to the passage of that legislation, when defrauded homeowners of the housing bubble and defrauded investors of the bundled mortgages try to fight back through the class-action vehicle, they will find a new layer of corporate-friendly hurdles.

I personally admire Senator Obama. I want to believe Senator Obama is not a party to the scheme. But corporate interests have had plenty of time to do their vetting. Democracy demands no less of we, the people. **CP**

Pam Martens worked on Wall Street for 21 years; she has no securities position, long or short, in any company mentioned in this article. She writes on public interest issues from New Hampshire. She can be reached at pamk741@aol.com.

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die along India's sacred river.

The Himalayan expeditions and their aftermath are chronicled in *An Eye on Top of the World* by Pete Takeda (Thunder's Mouth Press, New York, 2006). Takeda, himself a mountaineer, won the cooperation of the U.S. mission members and journeyed to the Himalayas to retrace the steps of the expedition almost forty years later – and to share with his readers the suffering, terror, and exaltation that high altitude climbers risk their lives to experience.

Conceptually, the mission was quite simple. Simple enough to be pitched, cocktail-napkin style, to Air Force Gen. Curtis LeMay by a patriotic mountaineer Barry Bishop at a reception in Washington in 1964.

In those pre-satellite, pre-digital days, missiles fitted with simple radio devices and instruments transmitted unencrypted telemetry data on speed and altitude during their test flights to base stations for analysis. Anyone with a line-of-sight radio receiver could listen in.

To shield their program from prying electronic ears, China tested its missiles in the western wastes of Lop Nor. The only place for outsiders to access the signal was on top of the Himalayas.

So, the CIA took on the project and decided to place a radio receiver in one of the most inhospitable and inaccessible locations on earth, 25,500 feet above sea level, on top of Nanda Devi.

Obviously, the station would be unmanned. And, obviously, there was no place to plug it in. Given the immense difficulties of a Himalayan assault, replacing a battery every few months, as had been done with unmanned weather stations during World War II, was unworkable.

A solution was found in the radioisotopic thermal generator, or RTG, which had already been proven as a power source for satellites in the U.S. space program.

The RTG exploits a characteristic of bimetallic circuits, the Seebeck effect, that has been known since the 19th century. Passing electricity through a bimetallic circuit can generate cold ... and passing heat through the circuit can generate electricity. If the heat is coming from the natural decay of plutonium 238 (a highly radioactive isotope – with a half life of 87 years – that can produce surface temperatures of 1050°C in some configurations), a generator that can operate for decades at high power without refueling or service is created.

The CIA commissioned the construction of an RTG-powered radio transceiver and recruited a high-level team of six American mountaineers to place it on Nanda Devi. It also reached out to the Indian Intelligence Bureau (IB) for assistance. The Indian IB, suspicious of the Chinese, agreed to cooperate informally with the United States despite the Indian government's official non-aligned policy.

Captain M. S. Kohli of the Indian navy, who had become a national hero as the first Indian to reach the top of Everest in 1965, was given the immense task of handling the logistics and recruiting the Indian climbers, porters, and Sherpas needed to push a piece of equipment the size of a decent-sized refrigerator to the top of a Himalayan peak.

The CIA took on the project and decided to place a radio receiver 25,500 feet above sea level, on top of Nanda Devi.

Kohli wrote his own memoir of the expedition, *Spies in the Himalayas*, together with Kenneth Conboy, a writer on security affairs affiliated with the Heritage Foundation.

Kohli's account differs strikingly in some details from Takeda's in terms of who messed up during the disastrous mission, but the overall narrative is the same.

In the fall of 1965, the joint American-Indian expedition trekked to the base of Nanda Devi, where it received helicopter delivery of the transceiver/RTG assembly and four pounds of Pu 238 fabricated into seven jacketed rods. A team of 31 – one of the largest climbing teams ever fielded in the region – toiled up the mountain for three weeks with the fueled RTG and five boxes of antennas and radio gear.

Just as a team of American and Indian climbers and Sherpas was about to reach the top with the transceiver, bad weather, that bugbear of Himalayan expeditions, set in. The climbing season was over, and installation would have to be attempted again in the next year. To spare the team the extremely onerous task of hauling the transceiver down the mountain and back up again, it was decided to secure the device to a rocky outcropping and return for it next year.

When the climbers returned in the spring of 1966, they discovered to their horror that the transceiver – and the entire ledge it had been secured to – had been swept off the mountain by an avalanche.

Somewhere, thousands of feet below, were the transceiver with its RTG. Somewhere down there, probably in the immense glacier that uncoils lazily from the foot of the mountain toward the Indian plain, where its melting ice feeds the headwaters of the Ganges. Frantic efforts were made, on that and subsequent expeditions, to locate the RTG. But it was never found and eventually the CIA gave up.

The CIA was defeated by the RTG's salient characteristic – the heat of the plutonium inside it. When the RTG struck the icy surface, it simply melted its way out of sight into the heart of the glacier.

Best-case scenario is that the RTG is intact, happily sitting on bedrock and burbling like a giant, million-dollar Slushee machine, while the glacier melts and slips around it. Worst case is that some combination of ice and rock crushed the hardened casing of the RTG and swept plutonium grit down into the melt zone and into the Ganges.

The worst case was very much on the Indian government's mind when the reporter Howard Kohn picked up on U.S. mountaineers' gossip and broke the story in an article entitled "The Nanda Devi Caper" in *Outside* magazine in 1978.

India's prime minister had to reassure the nation that everything was OK, and backed it up with a government report that provides the only official confirmation of the whole incredible affair. (The U.S. has never declassified the mission; when I corresponded with one of the principals concerning the affair, he remarked, "Officially we can only consider [Takeda's and Kohli & Conboy's] books out on the subject as science fiction or other types of fiction.")

As the Indian report pointed out, any released plutonium – twice as heavy as lead – would probably settle out of the water into the gravel riverbed of the

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upper Ganges before it entered India's most populous areas. If it did enter the Indian plain, the plutonium would be so diluted by the immense volume of the water flowing in the Ganges that the likelihood of serious health problems for a great many people who drank from the river was relatively small.

So, in theory, there was no big problem. In practice, it's hard to be sure with plutonium – especially Pu 238 in its early 1960s incarnation as RTG fuel.

Plutonium is perhaps the most protean of elements. First created in 1941 by a team headed by Glenn Seaborg, it really doesn't belong on this earth. And plutonium acts like it's really not very happy to be here.

Atomically, a single lump of plutonium exists as a stew of twenty different isotopes ceaselessly decaying and splitting, forming different elements, recombining to its original form, changing again, ticking with radiation as it swirls impatiently through its permutations.

Physically and chemically, plutonium is equally problematic. A plutonium advocate, David Fishlock of the UK group SONE (Supporters of Nuclear Energy), described his favorite element:

"It has six allotropic forms or crystal structures; more than any other element. One is so brittle it shatters like glass. Worse, it has a perplexing tendency to switch from one to another with significantly different properties, as the temperature changes. Finely divided, as swarf or fillings, it can catch fire spontaneously. No one seems to know the color of the flame, but magenta is a good guess. All this makes it infuriating to work with. Too much in one place can 'go critical,' a weak but deadly kind of nuclear explosion that releases gamma rays."

And, of course, plutonium is very dangerous.

In the early years of the nuclear age, plutonium displayed an alarming propensity for confounding, eluding, and even killing its human captors.

Beyond the destruction of Nagasaki and the notorious deaths in two separate incidents of Harry Daghlian and Louis Slotin while "tickling the dragon's tail", i.e., manipulating blocks of plutonium in order to ascertain its critical mass during the Manhattan Project, the annals of early plutonium health physics are an alarming litany of blue flashes, exploding glove boxes, irradiation, and the occasional emergency amputation.

If incinerated, injected into the atmosphere as microparticulates, inhaled and lodged in the lung, a few micrograms can cause cancer.

U.S. government documents from the 1960s also reveal that Pu 238 slurries displayed an alarming tendency for radiation excursions while stored in tanks. This led to guidelines that limited the quantity stored in one place to no more than four pounds – the amount of plutonium loaded into the RTG on Nanda Devi.

When the young Queen Elizabeth visited the UK Atomic Energy Establishment at Harwood, a physicist there, Dr. Eric Voice, offered her a lump of plutonium in a plastic bag.

Nevertheless, in the 1950s and 1960s, before it had a vested interest in hyping the dangers of the "dirty bomb," the government was just as eager to employ plutonium in defense, power generation, and terrestrial and celestial RTGs, and convince the public that enhancing the environment's meager bounty of transuranic elements was not a particularly dangerous or reckless thing to do.

Plutonium's defenders debunked the canard that "plute" is, gram for gram, the deadliest substance on earth – radium, sarin, and ricin are reputedly worse. To support their case, they cited the manageable risk of plutonium 238's routine emission – the alpha particle.

Alpha particles are deadly but lumbering. Basically the nucleus of helium atom, their positive charge drives them away from other nuclei and limits the damage they can do. Alpha particles can be stopped by paper, plastic, or the thin layer of dead skin covering the human body and will wreak havoc only if inhaled or ingested. In an RTG, they are safely buttoned up inside the fuel cell's tantalum and alloy cladding.

When the young Queen Elizabeth visited the UK Atomic Energy Establishment at Harwood, a physicist there, Dr. Eric Voice, offered her a lump of plutonium in a plastic bag. The queen is one of the few people to have experienced plutonium's unique tactile signature – the warm, heavy mass pours heat into the hand "like a live rabbit." There was no report of any ill effects suffered by the monarch as a result.

A dedicated plutonium evangelist, Voice had himself injected with plutonium in the 1990s to demonstrate that safety concerns were overblown. Over the next few years, he went the extra mile and inhaled plutonium in a series of tests. Indeed, Mr. Voice died in 2004, five years after the tests concluded, of motor neuron disease, i.e., nonplutonium causes. He received the thanks of a grateful nation – but not the cremation he desired. Cautiously, the British government entombed his remains in a lead-lined coffin instead.

However, theoretical plutonium 238

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– a dependable, single-minded emitter of alpha particles – and real world plutonium 238 are two different things. I discovered this in a trove of nuclear-related documents once made publicly by the Los Alamos National Laboratory but withdrawn in 2002. Thanks to the efforts of researchers Gregory Walker and Carey Sublette, they are now available on the website of the Federation of American Scientists.

Real-world plutonium 238 – especially in its early 1960s incarnation – was abuzz with neutron radiation. Neutrons are everybody's least favorite particles because they are heavy, carry no charge, aren't stopped at the skin, and can ping-pong freely through the human anatomy colliding and combining with nuclei, eliciting secondary radiation and cell damage. Neutron radiation is classed as highly penetrating, demands an immense amount of shielding, and is subject to a 10x health effects multiplier. Exposure to the same energy of neutron radiation is considered to be ten times more dangerous than beta and gamma radiation and as dangerous as inhaled alpha particles.

Plutonium's 238's natural decay emits few neutron particles – about 2,100 per gram per second. However, for the Nanda Devi RTG, hidden in the matrix of plutonium physics and chemistry was another, much more significant source of neutrons – the alpha-neutron reaction.

Plutonium 238 fuel is considerably more complicated than pure plutonium 238. It hosts an admixture of approximately 15 per cent of five other plutonium isotopes formed during the creation of Pu 238 in the reactor, each with their own radiation profile. It can also contain small but significant quantities – at the parts per million and parts per billion level – of light element impurities such as fluorine, beryllium, boron, and aluminum.

The alpha-neutron effect occurs when the alpha particles emitted by the decay of the plutonium 238 atom collide with susceptible light element impurities inside the metal itself. The impurities absorb the alpha particles and release neutrons instead. Light element impurities were a fact of life in the 1960s, as scientists and technicians struggled with enormous challenges of physics, chemistry, process design and safety to generate plutonium 238 in reactor fuel rods and extract, purify and reduce it to metal.

When the plutonium fuel cells destined for Nanda Devi and Nanda Kot were fabricated, apparently not all the problems had been licked. To a certain degree, light-element contamination was built into the process. A key step involved reacting plutonium with fluorine – one of those light elements – to produce plutonium tetrafluoride. It also produced an abundance of neutrons, enough to justify the full radiation safety paraphernalia of counters and badges, remote handling equipment, and 16-inch thick Lucite shielding to protect the technicians.

After the Pu 238 was reduced to metal and the fuel went into space on probes and satellites, a certain amount of light-element contamination – and neutrons – inevitably went with it. The RTGs had to be packaged in graphite containers attached to booms, so their radiation as well as their heat would attenuate before reaching the mission electronics.

Clearly, among specialists in the RTG program in the 1960s there was knowledge of the neutron issue, but that awareness does not seem to have filtered down to the Himalayan expeditions.

In 1967, Los Alamos evaluated existing RTG plutonium for use as a power source in heart pacemakers – and rejected it. Tests showed that the fuel emitted unacceptably high levels of neutron radiation due to light element contamination and the alpha-neutron reaction. How much radiation? As much as 150 times as many neutrons as should have been expected based on a pure Pu 238/Pu 239 mixture. In a four-pound RTG fuel array, that's not enough neutron radiation to cause acute radiation sickness – but it's enough to present a genuine cancer risk to humans.

So RTG radiation safety was not simply a matter of alpha particles buzzing harmlessly against the alloy cladding of the fuel cell like bewildered bumblebees in a jar. Neutrons were most certainly in the mix, and a goodly number would unavoidably have gone streaming through the minimal alloy and graphite shielding, into the atmosphere, and into the tissues of whoever was standing nearby.

Clearly, among specialists in the RTG program in the 1960s there was knowledge of the neutron issue, but that awareness does not seem to have filtered down to the Himalayan expeditions.

Accounts of fuel and radiation safety issues differ markedly between the Indian and American mountaineers (Captain Kohli declined to be interviewed by Pete Takeda for his book; nor did Kohli and Conboy interview any of the U.S. climbers for their book).

Kohli and Conboy state that the American side distributed radiation badges "that changed color" – not a normal attribute of film badges, which normally have to be developed in a lab – but the U.S. team members interviewed by Takeda have no such recollection.

Jim McCarthy, the American alpinist and lawyer who was trained at Martin Marietta to load the Pu 238 fuel into the RTG, is mistakenly identified by Kohli and Conboy as an experienced Atomic Energy Commission technician and the mission's authority on radiation matters. McCarthy, on the other hand, has stated emphatically to Pete Takeda that neutron radiation hazards were never discussed during his specialized training or, for that matter, at any point in the mission.

The U.S. team members interviewed by Takeda claim they received only rudimentary instruction and minimal information concerning the radioactive character of the device they were handling. Nevertheless, the other team members were expected to rely upon the purported experience of the Americans in matters of nuclear safety.

Sifting through the conflicting accounts, it is difficult to avoid the conclusion that the CIA should have and would have been aware of radiation safety issues surrounding the RTGs – but chose to discount them as an unnecessary complication and distraction to the urgent and Herculean task of pushing a transceiver up a Himalayan mountain to eavesdrop on Lop Nor.

In a telling indication of what the CIA knew, and what its priorities were, neutron detectors were sent to Nanda Devi,

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but not for radiation safety reasons.

After the disappearance of the RTG had horrified Indian intelligence, threatening to trigger a diplomatic incident and public relations fiasco, teams were mobilized in 1966 and 1967 to scour the slopes of Nanda Devi for months in an intensive effort to recover the expensive and embarrassing device.

Both teams were equipped with metal detectors—and with neutron counters. They were instructed to search for neutron radiation at a rate of 1,000 counts per second—about ten times above background.

They found nothing and in 1968 the search effort was abandoned.

When the hurriedly planned and hastily executed scheme unraveled, humor was the antidote to failure – at least at CIA headquarters. In the embarrassing aftermath of the loss of the Nanda Devi RTG, the project was reputedly referred to at Langley as "Making a Billion Hindus Glow in the Dark." Of course, it was not the Indians – or the Americans – who bore the brunt of the radiation. The people who were closest to the RTGs for the longest period of time were the Sherpas, the Nepalese villagers whose experience, stamina, and determination have been crucial to every Himalayan assault – including the ridiculous task of pushing a nuclear-power transceiver to a mountaintop.

The Sherpas packing the RTG up the mountain conceived a strong affection for the device. It was very warm, a welcome characteristic in a high altitude environment that afflicts climbers with cold, hypoxia, low metabolism, and accelerated loss of body fat. They called the RTG Guru Rinpoche, in a joking reference to its mysterious heat energy and supposed divinity. They argued over who would carry it, as the team inched its way up the slopes of Nanda Devi during the three-week assault. While the rest of the transceiver froze outdoors through the Himalayan nights, the RTG was welcome in the Sherpas' tents.

Jim McCarthy, the mountaineer in charge of fueling the RTG, recalled: "They had no idea of what it was. After it was loaded, they'd put the thing in the middle of their tent and huddle around it." [Takeda, p. 200]

The ad hoc and apparently haphazard nature of the radiation precautions can also be seen from Kohli and Conboy's account contrasting the silent, wary caution of the American and Indian climbers with the Sherpas' enthusiastic and unwitting embrace of the RTG.

"Oblivious to any danger, the Sherpas snuggled up to the device, warming their hands and patting their faces. Despite Jim's assurances that the chance of dangerous radiation exposure was minimal, the friends and members [the mission euphemism for the American and Indian climbers, respectively] were not inclined to join the Sherpas." (Conboy & Kohli, pg. 78).

The CIA was defeated by the RTG's salient characteristic – the heat of the plutonium inside it. When the RTG struck the icy surface, it simply melted its way out of sight into the heart of the glacier.

For some of the Sherpas, the Nanda Devi RTG was just the beginning of their exposure. Because losing an RTG on Nanda Devi did not end the CIA's interest in a listening post on top of the Himalayas.

Further review after the first botched mission convinced the CIA that a lower, more accessible summit on the mountain of Nanda Kot – lower than Nanda Devi, perhaps, but still a major peak at 22,500 feet – would be a suitable location for the transceiver. So, in the following year, yet another team – including Captain Kohli and using some of the same Sherpas – hauled a second RTG-powered device up Nanda Kot.

This time, they successfully installed it. However, after a few months the signals stopped. Another arduous assault revealed the presence of an insidious countermeasure – snow. It had completely buried the transceiver and its antennae, rendering them useless.

In good news for the CIA, an intensive search over the featureless summit discovered the RTG, humming away blissfully under the snow in a glistening cavern five feet across that it had melted for itself. In bad news for the Sherpas, the CIA decided to abandon the Nanda Kot location (and RTG-powered listening posts in general – Nanda Kot was the last gasp), and the unwitting Sherpas received a third dose of exposure in October 1967 as they laboriously lugged the RTG back down the mountain again.

Captain Kohli, responsible for recruiting the Sherpas and, in a way, responsible for their ultimate well-being, believes there were no radiation-related health issues. I corresponded with Captain Kohli about any problems the Sherpas might have experienced. He replied:

"After the expedition they left for their hometowns. It is, therefore, not possible to find out whether there was any radio activity effect on those who carried it. According to nuclear experts, it is quite safe to carry. In fact, Sherpas were happy to use it because of its heat, they remained cozy while carrying it.

"As for members, Sonam Gyatso died in 1968 from cirrhosis of liver. Some suspected some effect of radio activity, but I do not agree."

In his book, speaking in the third person, Captain Kohli movingly describes the death of Sonam Gyatso in an Indian hospital in 1968:

"Kohli looked at his friend and began to weep. Barely alive, Sonam's robust frame looked frail and shrunken. His face, normally burned a rich chocolate from the strong ultraviolet rays at high altitude, was waxy and lifeless, the color drained from his lips ... Kohli leaned forward and touched his friend's hand. As if by a miracle, Sonam opened his eyes, leveled a distant stare in Kohli's direction, and feebly tried to lift his right arm. Pointing a finger at his wife, his eyes grew slightly more focused. 'Look after her', Sonam whispered. He tried to say more, but nothing came out. His eyes and finger remained frozen, but his chest stopped moving.

"His Holiness Gyalwa Karmapa [the incarnation of Chenrezig, the bodhisattva of compassion, as head of the Black Hat sect of Tibetan Buddhism] will accept you at his feet," said Kohli." [Kohli & Conboy, p.180]

Kohli attributed Sonam's death to his

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lifetime of drinking. But Jim McCarthy has a different perspective. In 1971, five years after the expedition and three years after Sonam Gyatso died, McCarthy came down with testicular cancer. According to the weighting factors, developed over sixty years of observation, the gonads are the tissue most vulnerable to radiation exposure. McCarthy adamantly attributes his cancer to exposure received while directly handling the plutonium fuel rods – alloy jacketed but essentially transparent to neutron radiation – before inserting them into the RTG.

Takeda quotes him as saying:

"I was the only guy who handled the actual plutonium and I'm the one who loaded the device. I had to straddle the f---ing thing. Let me tell you, the fuel rods were nice and wildly warm ... No question, there was no shielding at all and I got a large dose of radiation." [Takeda, pp.199-200]

Regarding the Sherpas, McCarthy stated in 2005: "If you challenge the Indians to prove any of those Sherpas are alive today, it can't be done. They are all dead." [Takeda, p. 200]

McCarthy's claims can be challenged – but they can't be dismissed. Too little is known about the circumstances of the climbers' neutron radiation exposure to draw definitive conclusions.

Regarding the Sherpas, McCarthy stated in 2005: "If you challenge the Indians to prove any of those Sherpas are alive today, it can't be done. They are all dead."

The Sherpas were, of course, ignorant of the nuclear nature of the device, the radiation that may have poured out of the fuel rods and through the graphite casing, and what it might do to them. Even the names of the Sherpas who bore the brunt of the exposure are largely unknown, let alone any calculation, record, or recollection of who spent how much time how close to the RTG. What the neutron radiation did to the Sherpas is a matter of melancholy conjecture.

The Sherpas carried the legacy of their nuclear encounter back to their mountain villages. When they died there, their remains were disposed of through cremation or sky burial. The answer to the question of how they died is literally not on this earth.

We will probably never know what really happened. The answer is lost in the buzz of radiation and the hum of statistical noise, just as the RTG itself lies lost, remote, and deadly somewhere in the Himalayas. **CP**

Peter Lee is a business man who has spent thirty years observing, analyzing, and writing on Asian affairs. He gratefully acknowledges the assistance of Pete Takeda in preparing this article. Lee can be reached at peterrlee_2000@yahoo.com.

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